

Application No. 09/993,866
Amendment Dated February 17, 2005
Reply to the Office Action of November 24, 2004

Remarks/Arguments

Specification has not been amended. Drawings have not been amended. No new claims have been added. No claims have been cancelled. Claims 1-19 remain pending in this application. Reexamination and reconsideration of the application are respectfully requested.

Continued Examination Under 37 CFR 1.114

Applicants would like to thank Examiner Ms. Good-Johnson for her consideration and acceptance of the Applicant's request for continued examination under 37 CFR 1.114. The Examiner has now reopened prosecution of the application and has entered the Applicant's submission filed on 09/13/2004 into the records.

Claim Rejections Under 35 USC § 102

The Examiner states that Applicants' arguments with respect to the rejections of the Claims 1-19 under 35 USC § 102 Marshall have been fully considered and are persuasive. As a result, the rejection under 35 USC § 102 has been withdrawn. However, the Examiner makes a new ground of rejection under 35 USC § 103, Marshall in view of Pendleton.

Claim Rejections under 35 U.S.C. § 103

The Examiner rejects Claims 1-19 under 35 U.S.C. § 103(a) as being unpatentable over Marshall et al., US 6,101,493 (hereinafter "Marshall") in view of Peltonen et al., US 5,926,807 (hereinafter "Peltonen"). Applicants respectfully traverse this rejection for the reasons set forth below:

Application No. 09/993,866
Amendment Dated February 17, 2005
Reply to the Office Action of November 24, 2004

Applicants have amended the previously amended Claims 1, 2, 4, 5, 8-12 and 14-19 to replace the term "predetermined abridged forms" with its synonymous term "predetermined icons" to further clarify the fact that these terms refer to graphical images (i.e. visual displays) that are displayed on the display screen to represent a block of data that are not displayed (i.e. abridged data) and can be manipulated by the user to retrieve those abridged data. The terms "predetermined displays", "predetermined abridged forms" and "predetermined icons" refer to images, texts, colors, patterns, symbols, or any other type of visual displays that are displayed to represent one or more blocks of data that are neither retrieved nor displayed (i.e. abridged data) in the display area. The "predetermined icons" are further distinguished from Peltonen's data "segments" in that icons do not contain any target data, but segments contain subset of data. The amended claims now recite that some blocks of data (i.e. data sets) are actually displayed while some other blocks of data (i.e. data groups) are not displayed. For those blocks of data that are not displayed (i.e. data groups), predetermined icons are displayed instead. Applicants believe that the amended claims are now in condition for allowance.

Regarding Claim 1, the Examiner noted that Marshall fails to disclose one or multiple first predetermined abridged forms (i.e. predetermined icons), which represent one or multiple first data groups of the target data other than said first data sets and the contents of which are not displayed, are present in said display area. Applicants agree with this Examiner conclusion. However, the Examiner further concludes that Peltonen discloses such predetermined abridged forms by interpreting Peltonen's "segments" as Applicant's "predetermined abridged forms". Applicants respectfully disagree and believe that the Examiner has misinterpreted Peltonen's data "segments"

Application No. 09/993,866
Amendment Dated February 17, 2005
Reply to the Office Action of November 24, 2004

and has ignored and/or mischaracterized the definition of the Applicant's "predetermined abridged forms" as given in the specification and as recited above.

Peltonen discloses an elaborate facility for reducing the amount of memory consumed by the query results. Through this facility, rows of the database query result are divided into a number of subsets, called "table segments" or "segments". Each segment contains the result rows whose keys fall within a distinct sub-range of key values. When new rows of the query result are received, they are added to the appropriate segment based on its key value. Each segment can either be a full segment, a partial segment, or a minimal segment, indicating the level of row data being retained in that segment. Full segments contain complete row data, while partial and minimal segments each contain progressively smaller portions of the row data. In addition, each segment includes a key sort vector and a bookmark sort vector used to identify the different orders for traversing the row data. In order to reduce the amount of memory consumed by the query result, when the amount of memory consumed by query results exceeds a certain threshold, one or more full segments are converted into partial segments, and/or one or more partial segments are converted into minimal segments. This is very different from Applicants' claimed invention, which provides a method and system for displaying a very large amount of data in a limited display area (e.g. a list box) so that the contents of all data can be recognized and data transmission load can be reduced. The all-inclusive view of the target data in a limited display area and reduction of data transmission load is made possible with the aid of visual displays called "predetermined displays" or "predetermined abridged forms" or predetermined icons, which are displayed in place of those data that are not retrieved and are not displayed in the limited display area. Unlike Peltonen's "segments", Applicant's "predetermined displays" or "predetermined abridged forms" or "predetermined icons" do not

Application No. 09/993,866
Amendment Dated February 17, 2005
Reply to the Office Action of November 24, 2004

contain any data, do not contain any rows of data and do not contain any kind of sort vectors for traversing the data. They are simply a small graphical images such as "****◇****" or "▶" or any other symbols, which are used as placeholders for the data blocks that are not displayed.

Regarding Claim 2, Applicants disagree and believe that the Examiner has misconstrued the Marshall col. 8, lines 20-36 reference. As stated in Applicant's previous correspondence, although both Marshall and Applicants' invention are performing sorting of the retrieved data records, they provide totally different methods for displaying the sorted records. Unlike the Applicant's, in Marshall, the entire displayed records do not appear to be in a sorting order. According to Marshall, the first part of the retrieved records and the second part of the retrieved records are sorted and displayed separately. As a result, when they are displayed together, they do not present the entire data records in sorting order. For example and as shown in Marshall's FIG. 12, "Bird, Dennis" record in the first part of the displayed records appears before "Adams, Charles" record in the second part of the displayed records. In addition, Marshall's above reference does not teach displaying predetermined icons in lieu of displaying data groups (i.e. data that is not actually retrieved or displayed) as in Applicants' Claim 2. As a whole, data records in Marshall's list boxes do not appear in sorting order. However, according to the Applicants' invention, entire records of the first data sets are sorted and displayed in the list box along with predetermined icons. As a whole, data records in Applicants' invention list box appear in sorting order (see Application Fig. 4).

Regarding Claim 3, the Examiner agrees with the Applicants that Marshall fails to disclose first data sets include the first and the last data of said target data. However, the Examiner references Peltonen's col. 9, lines 5-10 and states that Peltonen discloses first data sets include the

Application No. 09/993,866

Amendment Dated February 17, 2005

Reply to the Office Action of November 24, 2004

first and the last data of said target. Once again Applicants disagree and believe that the Examiner has misconstrued the above reference. Peltonen col. 9, lines 5-10 recite: "Each segment object corresponds to a particular subrange within the overall range of key values for the result set. For example, segment object contains rows from a first key value of 'Nelson' to a last key value of 'Saxon'". Another words, each segment contains the first row and the last row of the particular subrange that it corresponds to. This does not mean that the first row and the last row of the result set (i.e. target data) are included in that segment. Unlike Peltonen, Applicants disclose the fact that displaying first data sets include displaying the first data (i.e. first row of target data) and the last data (i.e. last row of target data) in the limited display area of the list box regardless of the list box size. In Peltonen, the only way the first row and the last row of the result set (i.e. target data) could be displayed in a limited list box at the same time is either to have only one segment for all rows of the result set (which defeats the purpose of the Peltonen) or in the case of multiple segments, when the list box is large enough, to display both the segment that contains the first row of the result set (e.g. segment-1) and the segment that contains the last row of the result set (e.g. segment-n). This would be an arbitrary situation rather than a systematic approach for displaying all data in a limited display area. Unlike Peltonen, the Applicants' invention provides a process by which displaying of the first data and the last data of the target data (i.e. result set) in a limited display area is guaranteed. For details of this process, please refer to Application page 12, line 22 thru page 15, line 15 and Figs 3 and 4.

Regarding Claim 4, the Examiner states that Marshall col. 5, lines 7-16, disclose the operation of selecting said first predetermined abridged forms (i.e. predetermined icons), one or multiple second data sets, the contents of which are actually displayed, and one or multiple second

Application No. 09/993,866

Amendment Dated February 17, 2005

Reply to the Office Action of November 24, 2004

predetermined abridged forms (i.e. predetermined icons), which represents one or multiple second data groups of the target data other than said first and second data sets, are presented together with said first data sets in said display area. The Examiner further notes that Marshall fails to disclose predetermined abridged forms (i.e. predetermined icons) representing the data groups, the contents of which are not displayed. However, the Examiner references Peltonen's col. 6, lines 4-51 and by interpreting "segments" as "predetermined abridged forms" concludes that "it would have been obvious to one of ordinary skill in the art at the time of the invention of Marshall display of target data, to include abridged forms, i.e. segmented data, as disclosed in Peltonen, because reduced data conserves memory and further reduces the size of the representation of the query result." Once again Applicants disagree and believe that the Examiner has misconstrued and misinterpreted the above references. First of all, the above Marshall reference discloses first, second and third display areas, which are interlinked, and selection of a data item in one display area affects the contents of the other two display areas. Unlike Marshall, Applicants' invention does not disclose any interlinked display areas and all data are displayed in the same display area (i.e. said display area) and selection of a data item in this display area does not affect any other display areas. Second, as stated above in regards to Claim 1, Peltonen's "segments" are not same as the Applicants' "predetermined abridged forms" or "predetermined icons". Neither Marshall nor Peltonen disclose the concept of displaying predetermined icons (i.e. predetermined abridged forms or predetermined displays) (e.g. "****<>****" as shown in Fig. 4) representing the data records (i.e. data groups) that are not actually retrieved or displayed. According to the Applicants' invention and as recited in amended Claim 4, when a predetermined icon is selected, more data records are displayed in the same display area as currently displayed data records. Selection of the predetermined icon initiates a process through which the selected predetermined icon (i.e. predetermined abridged form) is deleted

Application No. 09/993,866
Amendment Dated February 17, 2005
Reply to the Office Action of November 24, 2004

and replaced by some of the data records previously not displayed and by additional predetermined icons (i.e. second predetermined icons) (see Application page 15, line 23 thru page 16, line 19, and Figs 5 and 6).

Regarding Claim 5, the Examiner states that Marshal col. 3, lines 11-31, disclose first predetermined displays and said second predetermined displays are correlated with the first data rows and the number of data rows of said first data groups and said second data groups, respectively. Applicants disagree and believe that the Examiner has misconstrued the above reference as well. Once again, the above Marshal reference discloses first and second display windows (i.e. display areas) that are interlinked and selection of a data item in one-display window affects contents of the other display windows. As noted by the Examiner, Marshall fails to disclose predetermined abridged forms (i.e. predetermined displays or predetermined icons) and does not teach the concept of displaying predetermined displays (i.e. predetermined icons such as "****<>****") to represent data that is not displayed in the display area. As such, Marshall's above reference cannot teach or disclose the correlation between the predetermined displays (i.e. predetermined icons) and the data that they represent. According to the Applicants' invention, when a predetermined display (i.e. predetermined icon) is added to the list of displayed data, it is correlated (i.e. associated) with the starting row number and the total number of rows of data that are not to be displayed but are to be represented by such predetermined display. An SQL cursor is updated to point to the data row immediately after the data not to be displayed (see Application page 14, lines 8-15). This facilitates the retrieval of associated data when a predetermined display is selected. In Marshall, there is no notion of predetermined displays or predetermined icons. Furthermore, there is no association in

Application No. 09/993,866
Amendment Dated February 17, 2005
Reply to the Office Action of November 24, 2004

terms of the starting row number and the total number of rows of data, between a data item in one display window and data items in another display window.

Regarding Claim 6, the Examiner states that Marshall col. 7, lines 1-21, disclose selection of said first data sets or said second data sets is a data entry operation. Applicants disagree and believe that the Examiner has misconstrued the above reference as well. Although in Marshall selection of a data item may cause a specific operation, this operation does not constitute a "data entry operation" as disclosed by the Applicants. In Marshall, the selected data is not entered as an input into another application or into a document in a word processing system. According to the above Marshall reference, after the user has selected one or more of the list box entries, a key is obtained from the database. This key is then used to retrieve, order and display appropriate entries in other interlinked list boxes. On the other hand, the selection of a data item from displayed first or second data sets in Applicant's invention does not cause a key to be obtained from a database for further processing. Furthermore, Marshall does not disclose the idea of using the selected data item in a "data entry operation". According to the Applicants' invention, when the data displayed in full is selected, an input operation for the data can be initiated. For example, the selected data may be entered into a word processing document or entered into an SQL statement or entered into a form. Applicants' present invention may be used not only for displaying data, but also for inputting data in an application by selecting the actually displayed data and avoiding manual data entry errors (see Application page 17, lines 8-14).

Regarding Claim 7, the Examiner states that Marshall col. 3, lines 46-59, disclose target data is recorded in a different computer system connected to said computer system via communication

Application No. 09/993,866
Amendment Dated February 17, 2005
Reply to the Office Action of November 24, 2004

means, and the contents of said first and second data groups are not transmitted from said different computer system to said computer system. The Examiner states that according to above Marshall reference, "data is obtained from tables in a database associated with the computer system" and thus making it inherent that the data may be retrieved from a different computer. Once again, Applicants disagree and believe that the Examiner has misconstrued the above reference. Although the above Marshall reference may imply that the data to be displayed may be retrieved from a different computer system than the computer system that displays the data, it does not disclose a method by which certain data is not actually retrieved nor transmitted from the different computer system and it does not disclose reducing of the communication load. However, as stated in Applicants' Claim 7, the contents of said first and second data groups are not transmitted from said different computer system to said computer system. According to Applicants' invention, only the fully displayed blocks of data are read from the database, transmitted over the network and displayed, not the abridged data (i.e. contents of the first and the second data groups). Thus, the communication load for data access is reduced (see Application page 5, lines 16-20 and page 15, lines 12-15). Marshall does not provide such mechanism.

Regarding Claim 8, the Examiner states that Marshall col. 8, lines 15-24, disclose a data display method ... comprising the step of: identifying first data sets, which are included in said target data to be displayed in said display area and the contents of which are actually displayed in said display area. Applicants agree with the Examiner that this step of Claim 8 may be implied by the above reference, which discloses a first set of records are retrieved from a database. However, Applicants respectfully point out that Marshall does not expressly disclose every limitations of Claim 8 as explained below.

Application No. 09/993,866
Amendment Dated February 17, 2005
Reply to the Office Action of November 24, 2004

The Examiner states that Marshall col. 8, lines 1-30, disclose identifying first data groups, which are included in said target data other than said first data sets and the contents of which are not displayed in said display area. Applicants disagree and believe that the Examiner has misconstrued the above reference. First of all Marshall's above reference disclose a key (not anything like Applicant's first data groups), which is not present in Applicants' invention. According to Marshall, after it is determined that a user selection has been made, a key is obtained from the database to represent the user selection of one or more entries in the list box. Unlike Marshall, no such key is obtained from the database to represent user selection of one or more entries in the display area of Applicants' invention. Second, the Examiner mistakenly correlates Marshall's second set of records with Applicants' first data groups. As stated in the above Marshall reference (see Marshall col. 8, lines 26-30), both the first set of records and the second set of records are retrieved and displayed in a list box. This is different from the Applicants' first data groups, which unlike the first data sets, are not retrieved nor displayed in the display area. Marshall teaches away from the concept of selectively not displaying a subset of target data. As noted by the Examiner, Marshall fails to disclose the concept of presenting first predetermined abridged forms (i.e. predetermined icons such as symbols "****<****") representing data groups that are not retrieved nor displayed in display area. The Examiner further states that Marshall col. 8, lines 28-39, disclose reading said first data sets from a recording area wherein said target data is stored and displaying said first data sets in said display area, because Marshall discloses "displaying the list box for the total records counted and updated the list box with a total number of records retrieved". Applicants disagree and point out that Applicants' invention does not display the total records counted and the total number of records retrieved.

Application No. 09/993,866
Amendment Dated February 17, 2005
Reply to the Office Action of November 24, 2004

The Examiner further states that Peltonen's col. 6, lines 4-51, disclose one or multiple first predetermined abridged forms, which represent one or multiple first data group of the target data other than said first data sets and the contents of which are not displayed. The Examiner concludes this by interpreting Applicants' predetermined abridged forms as Peltonen's partial and minimal data segments. Applicants respectfully disagree and believe that the Examiner has misinterpreted Applicants' predetermined abridged form. Unlike Peltonen's "segments", Applicants' "predetermined displays" or "predetermined abridged forms" or "predetermined icons" do not contain any data, do not contain any rows of data and do not contain any kind of sort vectors for traversing the data. They are simply a small graphical images such as "****◇****" or "▶" or any other symbols, which are used as placeholders for the data blocks that are not displayed.

Regarding Claims 9-19, since these claims are being rejected based on the same ground of rejection as of Claims 1-8, Applicants respectfully refer the Examiner to the above explanations.

Applicants believe that the amended claims address the Examiner's concern, recite the novel features of the invention and are now in condition for allowance.

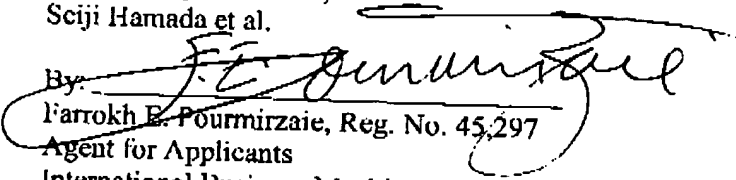
Application No. 09/993,866
Amendment Dated February 17, 2005
Reply to the Office Action of November 24, 2004

Conclusion

Applicants have amended the Claims 1, 2, 4, 5, 8-12 and 14-19 to replace the term "predetermined abridged forms" with its synonymous term "predetermined icons" and to distinguish and avoid misinterpretation over Peltonen's data "segments". In addition, Marshall fails to disclose anything similar to Applicants' predetermined abridged forms or predetermined icons and fails to disclose other novel features of the current invention. In view of the amendments and remarks set forth herein, Applicants believe that Marshall and Peltonen neither individually nor in combination teach the distinguished and novel features of the Applicants' invention.

Applicants therefore respectfully request that the Examiner reconsider all currently outstanding objections and rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Final Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this Application, the Examiner is invited to telephone the undersigned at the number provided. Prompt and favorable consideration of this Response is hereby solicited.

Respectfully submitted,
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